

AMENDMENT TO THE DRAWINGS:

Subject to the Examiner's approval, please substitute FIGs. 1-28 with the attached substitute FIGs. 1-28.

REPLACEMENT SHEET



```
      beq r 3, r4, L2
      li r5, 0
      j L 1
L2:   sll r6, r10, 2
      li r5, 1
L1:   move r2, r5
```

Fig. 1 (PRIOR ART)

```
(1) pseq <p1, p2>, r3, r4
(2) <p2> li r5, 0
(3) <p1> sll r6, r10, 2
(4) <p1> li r5, 1
(5) move r2, r5
```

Fig. 2 (PRIOR ART)

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REPLACEMENT SHEET

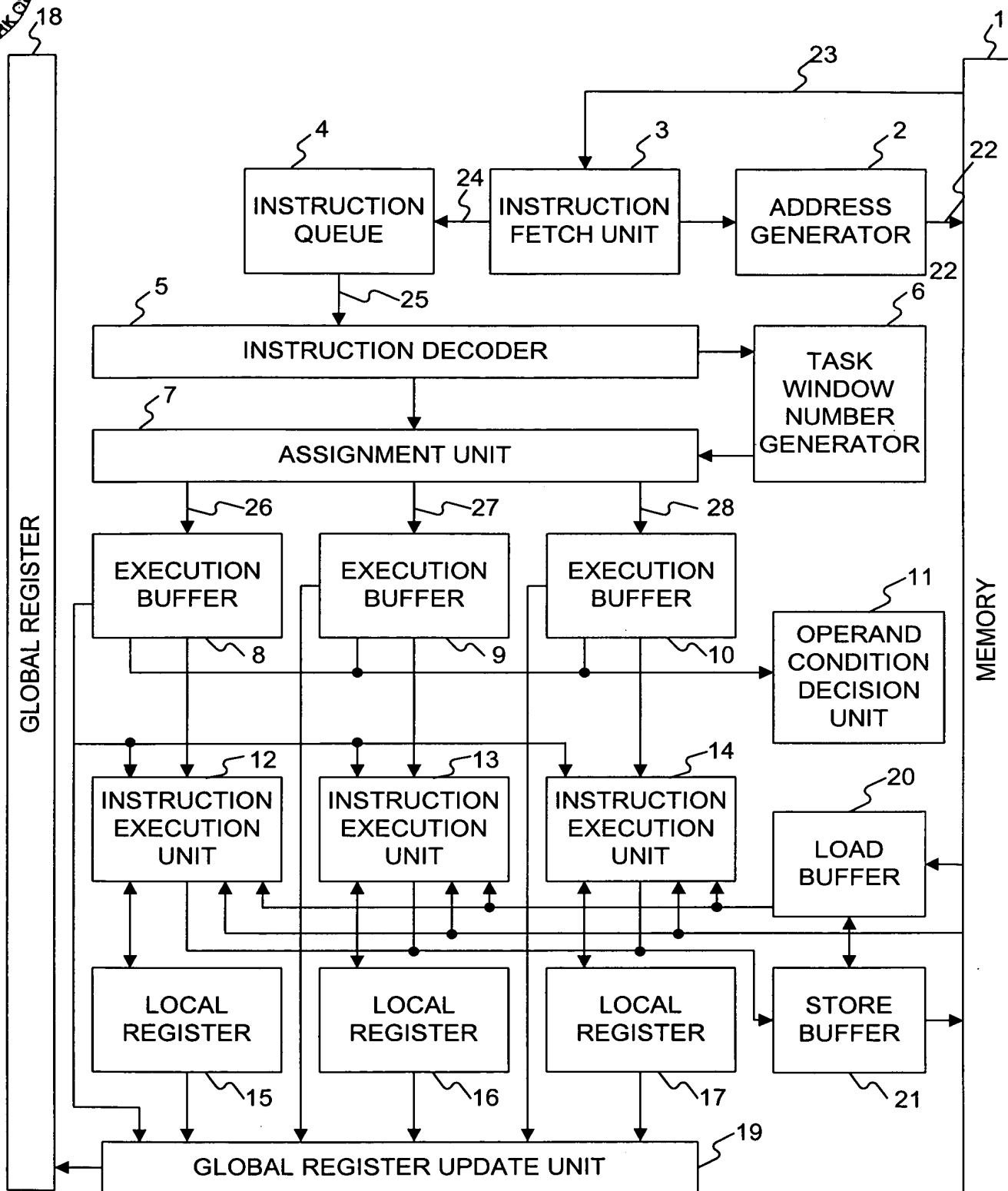


Fig. 3

REPLACEMENT SHEET

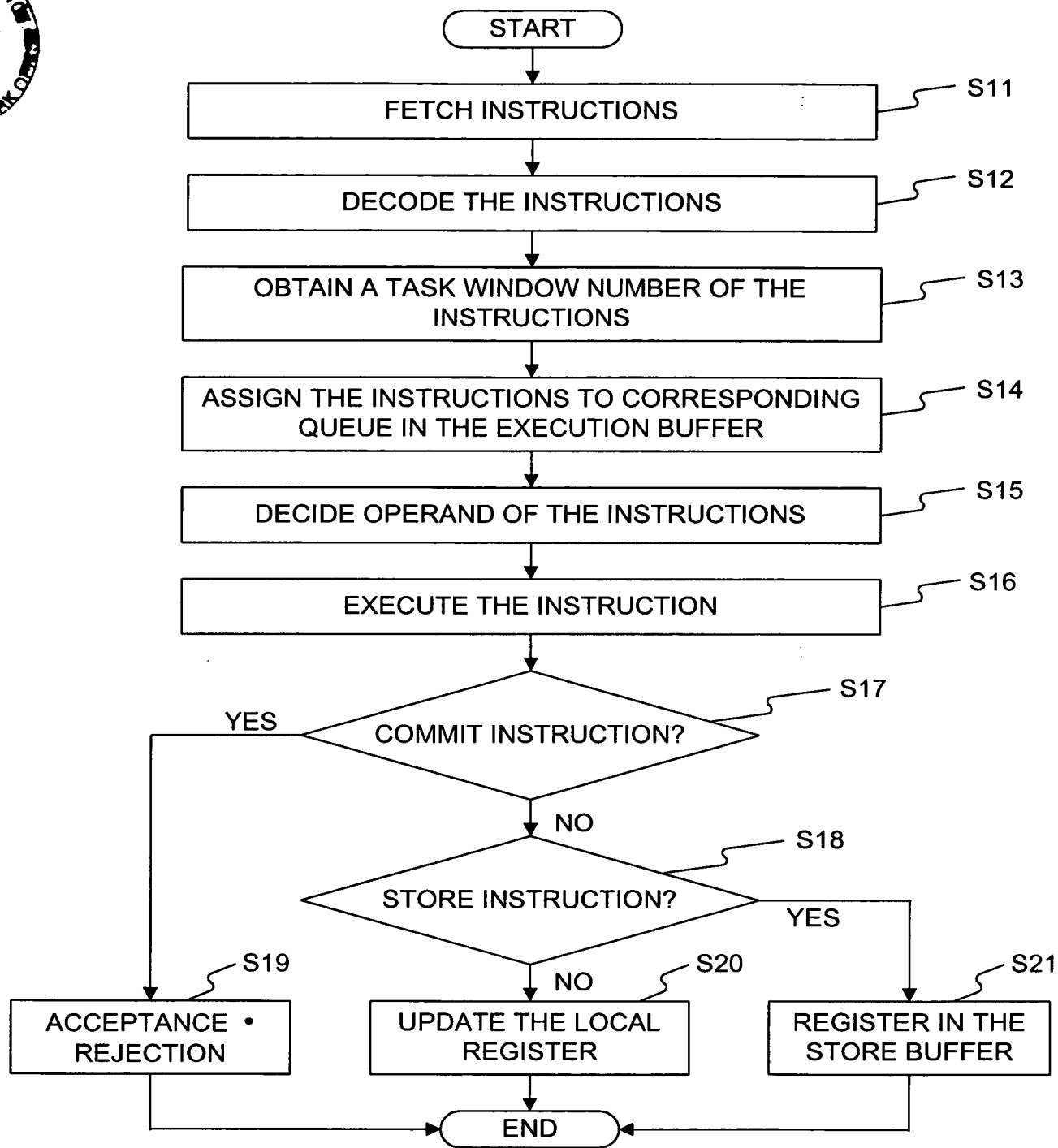


Fig. 4

REPLACEMENT SHEET

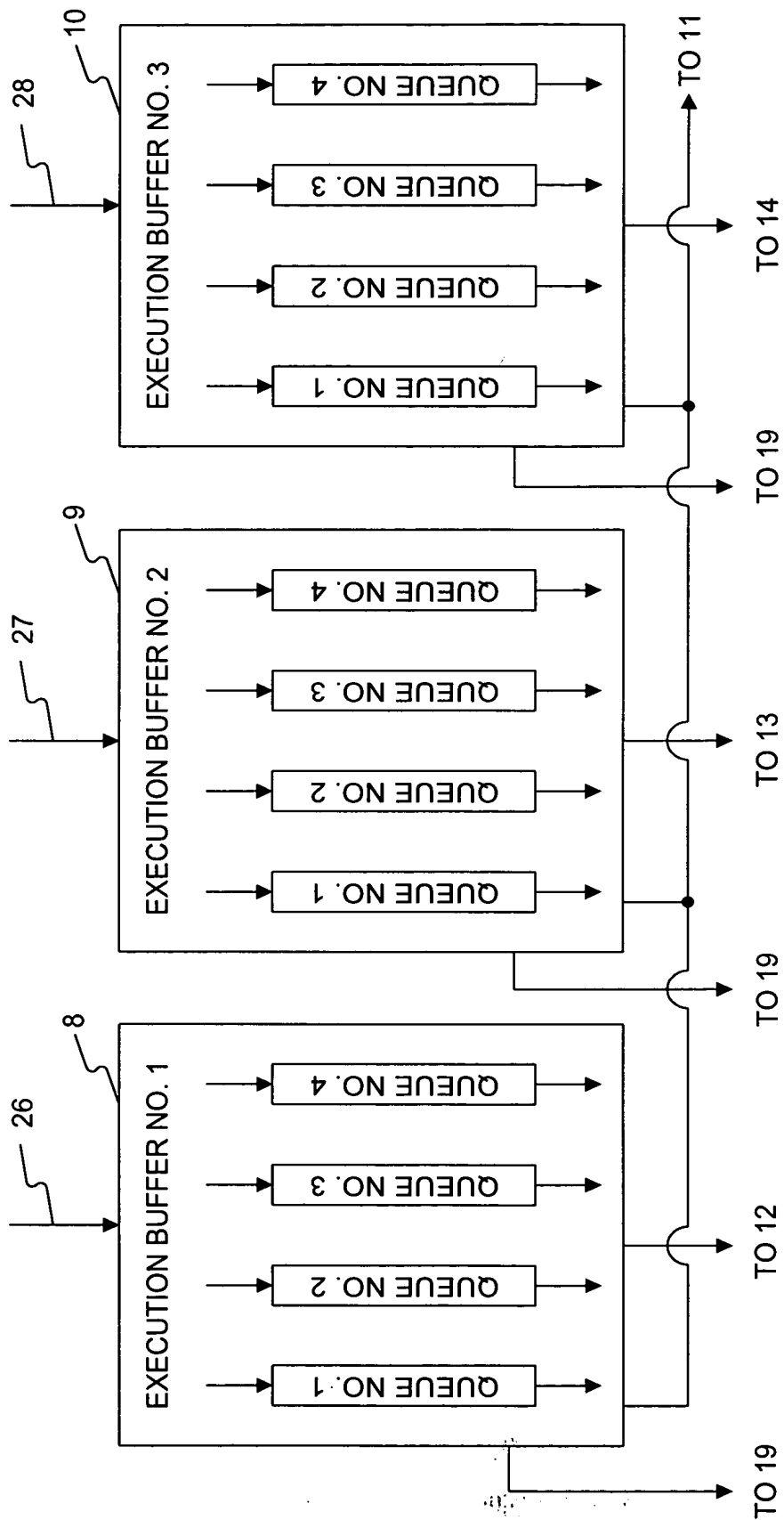
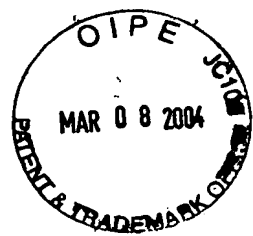


Fig. 5



REPLACEMENT SHEET



CLASS OF INSTRUCTION	OPERAND DATA	EXCEPTIONAL DATA
lw	7, 3, 0 (0)	← tail
sll	3, 4, 0 (6)	← execute
addiu	4, 5, 0 (100)	
addu	5, 6, 0 (0)	← commit ← head

Fig.. 6



REPLACEMENT SHEET

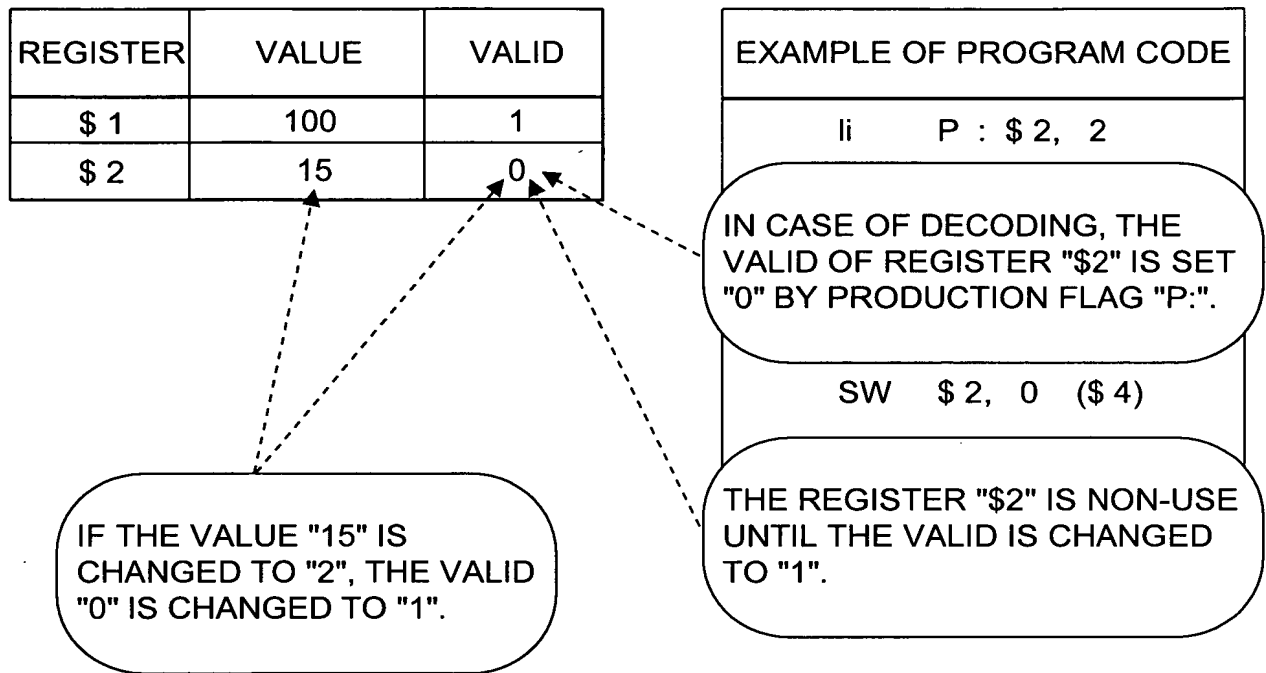


Fig. 7



REPLACEMENT SHEET

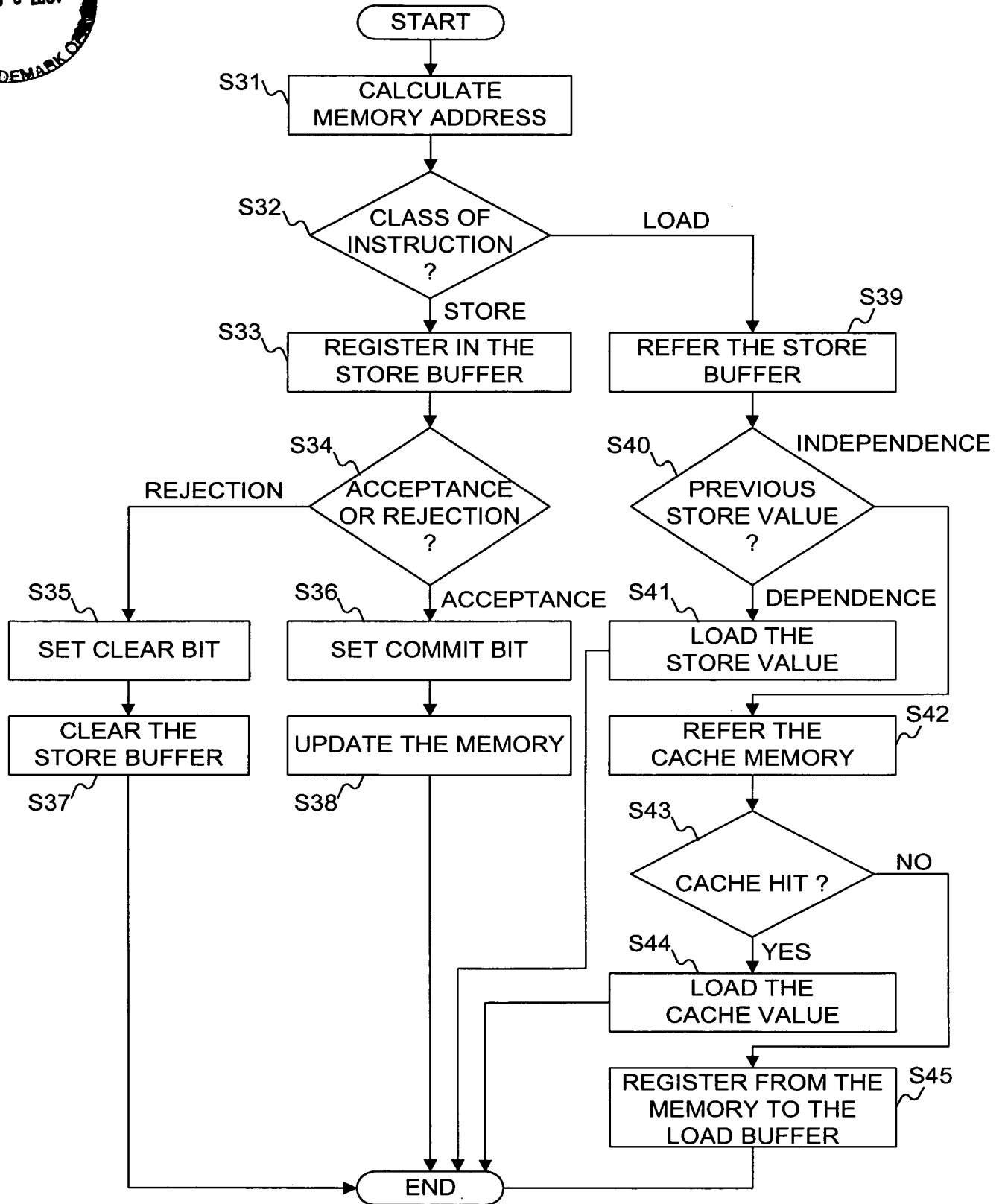


Fig. 8



REPLACEMENT SHEET

STORE ADDRESS	STORE VALUE	STORE WIDTH	TWID	CMT	CLR
10046e3c	3d70	H	1	0	0
10002a1e	1f	B	0	0	1
10015d60	1eb94	W	0	1	0

tail
head

Fig. 9

LOAD ADDRESS	REGISTER FIELD	valid	RFL
100143e0	02,08,15,22,10,34,01,05	00101001	0
10003160	03,05,14,13,07,04,05,08	01000101	1

tail
head

Fig. 10



REPLACEMENT SHEET

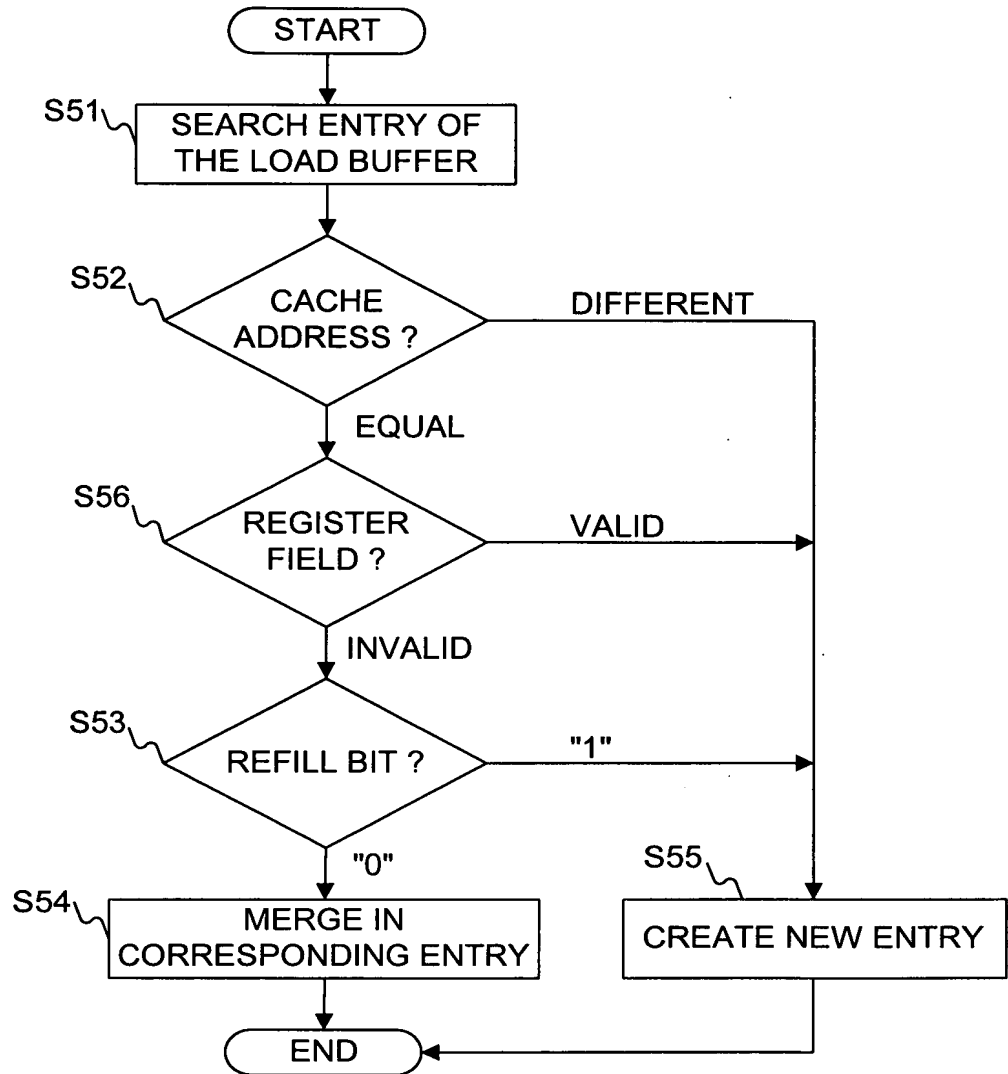


Fig. 11

TASK NUMBER	LOAD ADDRESS	LOAD WIDTH	CNF	VLD
3	1000923a	H	0	1
4	1001024c	W	1	0
2	1002149d	B	1	1

Fig. 12



REPLACEMENT SHEET

l b u. e	\$ 3, C h _ l _ G l o b (\$ 0)
b n e	\$ 3, \$ 6, \$ L48
l w. e	\$ 5, I n t _ G l o b (\$ 0)
a d d i u	\$ 7, \$ 7, - 1
m o v e	\$ 2, \$ 0
s u b u	\$ 3, \$ 7, \$ 5
s w	\$ 3, 0 (\$ 4)

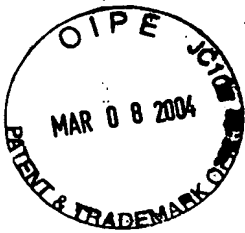
\$ L48:

a d d i u	\$ 6, \$ 0, 5
-----------	---------------

Fig. 13

1 : l b u. e	\$ 3, C h _ l _ G l o b (\$ 0)
2 : l w. e	\$ 5, I n t _ G l o b (\$ 0)
2 : a d d i u	\$ 7, \$ 7, - 1
3 : m o v e	\$ 2, \$ 0
2 : s u b u	\$ 3, \$ 7, \$ 5
2 : s w	\$ 3, 0 (\$ 4)
1 : c m t. n e	\$ 3, \$ 6, 1, 2, 3 , 2, 3
1 : a d d i u	\$ 6, \$ 0, 5

Fig. 14



REPLACEMENT SHEET

l w. e	\$ 4, I n t _ G l o b (\$ 0)
s l t i	\$ 3, \$ 4, 101
b n e	\$ 3, \$ 0, \$ L14
j	\$ L 9
s w	\$ 0, 0 (\$ 56)
\$ L 1 4 : a d d i u	\$ 3, \$ 0, 3

Fig. 15

1 : l w. e	\$ 4, I n t _ G l o b (\$ 0)
2 : s w	\$ 0, 0 (\$ 56)
1 : s l t i	\$ 3, \$ 4, 101
1 : b c m t. ' n e	\$ 3, \$ 0, \$ L14,
	1, 2 , 2
1 : j	\$ L9
\$ L 1 4 : 2 : a d d i u	\$ 3, \$ 0, 3

Fig. 16



REPLACEMENT SHEET

	l w	\$ 3, 0 (\$ 57)
	s w	\$ 16, 16 (\$ sp)
\$ L41 :	l w	\$ 9, 0 (\$ 11)
	a d d i u	\$11, \$11, 16
	s w	\$ 9, 0 (\$ 3)
	b n e	\$ 11, \$ 10, \$ L41

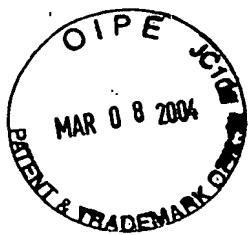
Fig. 17

1 :	l w	\$ 3, 0 (\$ 57)
3 :	s w	\$ 9 : P, 0 (\$ 11)
3 :	a d d i u	\$ 11, \$ 11, 16
4 :	s w	\$ 9, 0 (\$ 3)
2 :	s w	\$ 16, 16 (\$ sp)
3 :	l c m t. ne	\$ 11, \$ 10, \$ L41, 3, 4 , 1, 2

Fig. 18

1 :	l w	\$ 3, 0 (\$ 57)
1 :	a d d u	\$ 9, \$ 3, \$ 4
3 :	d. a d d u	\$ 9, \$ 3, \$ 4
3 :	s w	\$ 9, 0 (\$ 57)
3 :	d c m t	\$ 9, 3

Fig. 19



REPLACEMENT SHEET

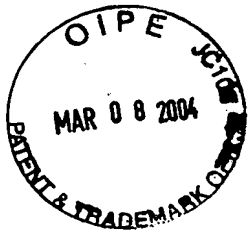
TASK
WINDOW
NUMBER

TASK
NUMBER

INSTRUCTION
NUMBER

1	\$ L46:	1 : m o v e P : \$ _5, \$ 4	[1]
		1 : a d d i u P : \$ _1, \$ 0, 65	[2]
		1 : a d d i u P : \$ 5, \$ 0, 1	[3]
		1 : l w \$ _1, 0 (\$ _5)	[4]
		1 : n o p	[5]
		1 : n o p	[6]
		1 : a d d i u P : \$ 6, \$ _1, 10	[7]
		1 : n o p	[8]
		1 : n o p	[9]
2	\$ L48:	3 : a d d i u \$6, \$ 6, -1	[10]
		2 : l b u. e \$ _2, C h l _G l o b (\$ 0)	[11]
		3 : l w. e P : \$ 1 _3, I n t _G l o b (\$ 0)	[12]
		3 : s u b u P : \$ _4, \$ 6, \$ _3	[13]
		2 : b c m t. n e \$ _2, \$ _1, \$L48	[14]
		{1 _1, 1 _3, 2 _1, 2 _2, 3 _1, 3 _3, 3 _4}, {1 _3, 1 _4,	
		3 _3, 3 _4}	
		4 : m o v e P : \$ 5, \$ 0	[15]
		4 : s w \$ _4, 0 (\$ _5)	[16]
		2 : n o p	[17]
3	\$ L48:	4 : n o p	[18]
		3 : n o p	[19]
		2 : n o p	[20]
		1 : l c m t. n e \$ 5, \$ 0, \$ L46	[21]
		{1 _3, 1 _4, 2 _2, 3 _1, 3 _3, 3 _4}, {}	
		1 : r c m t \$ 31	[22]
		{1 _1}	
		1 : n o p	[23]
		1 : n o p	[24]

Fig. 20



REPLACEMENT SHEET

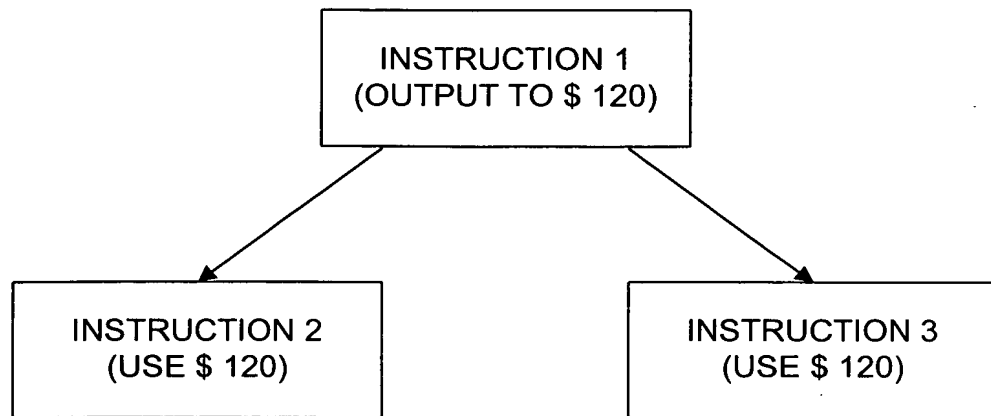


Fig. 21

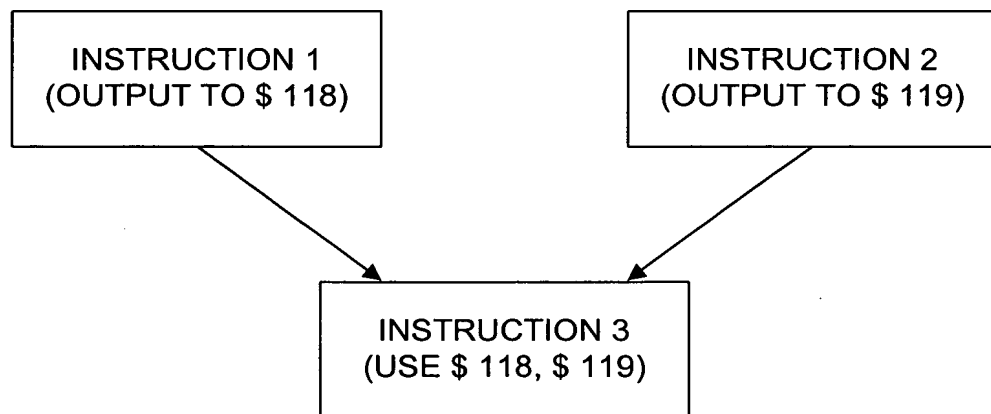
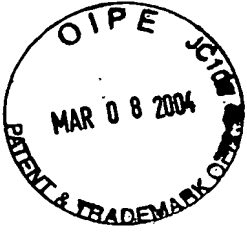


Fig. 22



REPLACEMENT SHEET

```
reflect :
    move $114, $6: move $113, $5; move $112, $4
    slti $115, $114, 2; nop: nop
    bne $115, $0, $L109; nop: nop
    lw.e $117, boardsize($0); addiu $116, $113.1: nop
    subu $113, $117, $116; nop: nop

$ L109:
    addiu $118, $0, 1; nop: nop
    beq $114, $118, $L111; nop: nop
    addiu $119, $0, 3; nop: nop
    bne $114, $119, $L110; nop: nop

$ L111:
    lw.e $121, boardsize($0); addiu $120, $112, 1: nop
    subu $112, $121, $120; nop: nop

$ L110:
    lw.e $123, boardsize($0); nop: nop
    mult $113, $123; nop: nop
    nop; nop: nop
    nop; nop: nop
    mflo $124; nop: nop
    jr $31; addu $2, $124, $112; nop
```

Fig. 23

REPLACEMENT SHEET



REPLACEMENT SHEET

```
reflect :
lw. e $123, boardsize ($0); move $114, $6; move $113, $5
mult $113, $123; slti $115, $114, 2; move $112, $4
nop; lw. e $117, boardsize ($0); addiu $116, $113, 1
nop; bne $115, $0, $L109; subu $113, $117, $116

$L109: mflr $124; addiu $118, $0, 1; aadiu $119, $0, 3
nop; beq $114, $118, $L111; nop
nop; bne $114, $119, $L110; nop

$L111: addiu $120, $112, 1; lw. e $121, boardsize ($0); nop
subu $112, $121, $120; nop: nop

$L110: addiu $2, $124, $112; jr $31: nop
```

Fig. 25



REPLACEMENT SHEET

```
reflect :
3:lw.e $123, boardsize ($0); 1:move $114, $6; 1:move $113, $5
3:mult $113, $123; 1:slti $115, $114, 2; 2:move $112, $4
3:nop; 3:lw.e $117, boardsize ($0); 3:addiu $116, $113, 1
3:nop; 1:bne $115, $0, $L109; 3:subu $113, $117, $116

SL109:
3:mflo; $124; 1:addiu $118, $0, 1; 3:addiu $119, $0, 3
3:nop; 1:beq $114, $118, $L111; 3:nop
1:nop; 1:bne $114, $119, $L110; 1:nop

SL111:
1:addiu $120, $112, 1; 1:lw.e $121, boardsize ($0); 1:nop
1:subu $112, $121, $120; 1:nop; 1:nop

SL110:
1:addiu $2, $124, $112; 1:jr $31; 1:nop
```

Fig. 26



REPLACEMENT SHEET

```
reflect :
3:lw.e $123, boardsize ($0); 1:move $114, $6; 1:move $113, $5
3:mult $113, $123; 1:slti $115, $114, 2; 2:move $112, $4
3:nop; 3:lw.e $117, boardsize ($0); 3:addiu $116, $113
3:nop; 1:cmt.ne $115, $0,; 3:subu $113, $117, $116
      {2_1, 2_3, 3_1, 3_2, 3_3|, |2_3, 3_3}
3:mflo; $124; 1:addiu $118, $0, 1; 3:addiu $119, $0, 3
3:nop; 1:bcmt.eq $114, $118, $L111,; 3:nop
      {1_3, 2_1, 3_3, 3_4|, |3_3, 3_4}
1:nop; 1:bcmt.ne $114, $119, $L110,; 1:nop
      {1_1, 2_1, 3_1|, }{

$L111:
1:addiu $120, $112, 1; 1:lw.e $121, boardsize ($0); 1:nop
1:subu $112, $121, $120; 1:nop; 1:nop

$L110:
1:addiu $2, $124, $112; 1:rcmt $31,; 1:nop
      {1_1, 2_1}
```

Fig. 27

REPLACEMENT SHEET



reflect:

```
3:lw. e $_1. boardsize ($0); 1:move P:$_1. S6: 1:move P:$3.$5
3:mult $3, $_1; 1:slti $_1. $_1.2: 2:move P:$7, $4
3:nop: 3:lw. e P:$3_2, boardsize ($0): 3:addiu $_1. $3. 1
3:nop: 1:cmt. ne $_1, $0,: 3:subu $3, $_2. $_1
      |2_1, 2_3, 3_1, 3_2, 3_3|, |2_3, 3_3|
3:mflo P:$_2; 1:addiu $_2, $0, 1: 3:addiu P:$2_3, $0, 3
3:nop: 1:bcmt. eq $_1, $_2, $L111,: 3:nop
      |1_3, 2_1, 3_3, 3_4|, |3_3, 3_4|
1:nop: 1:bcmt, ne $_1, $_3, $L110,: 1:nop
      |1_1, 2_1, 3_1|, ||
```

\$L111:

```
1:addiu $_3. $7. 1: 1:lw. e P:$1_4, boardsize ($0): 1:nop
1:subu $7, $_4. $_3; 1:nop: 1:nop
```

\$L110:

```
1:addiu $2. $_2, $7: 1:rcmt $31,, 1:nop
      |1_1, 2_1|
```

Fig. 28